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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/509,789   | 03/30/2000  | HANS-JOSEF STERZEL   | 48428               | 9729             |
| 26474  | 7590        | 10/22/2003           | EXAMINER            |                  |
| KEIL & WEINKAUF<br>1350 CONNECTICUT AVENUE, N.W.<br>WASHINGTON, DC 20036 |             |                      | DOVE, TRACY MAE     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1745                | 21               |
| DATE MAILED: 10/22/2003  |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                  |
|------------------------------|------------------------|------------------|
| <b>Office Action Summary</b> | Application No.        | Applicant(s)     |
|                              | 09/509,789             | STERZEL ET AL.   |
|                              | Examiner<br>Tracy Dove | Art Unit<br>1745 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 11 September 2003.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 21,22 and 25-27 is/are pending in the application.

4a) Of the above claim(s) 21,22,25 and 27 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 26 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 30 March 2000 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

|  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ .                                   |

## **DETAILED ACTION**

This Office Action is in response to the communication filed on 9/11/03. Applicant's arguments have been considered, but are not persuasive. Claims 21, 22 and 25-27 are pending. Claims 21, 22, 25 and 27 are withdrawn. Claim 26 is rejected in view of the prior art of record.

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/11/03 has been entered.

### ***Election/Restrictions***

Note Applicant has elected the species represented by formula IIIa (claim 26). Examiner confirmed this in a telephone interview with Herb Keil on 4/24/02.

Claims 21, 22, 25 and 27 are directed to an invention that is distinct from the invention originally elected for the following reasons: the elected species, formula IIIa, was deleted from claim 21 in the amendment filed 3/3/03. Since applicant has received an action on the merits for the originally elected invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 21, 22, 25 and 27 are withdrawn

from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

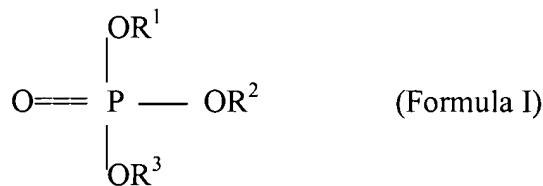
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claim 26 is rejected under 35 U.S.C. 102(e) as being anticipated by Narang et al., US 5,830,600.

Narang teaches nonflammable/self-extinguishing electrolytes for batteries. Novel fire-retardant electrolyte compositions comprise a lithium salt dissolved in a fire-retardant solvent selected from phosphates, phospholanes, cyclophosphazenes, silanes, fluorinated carbonates, fluorinated polyethers and mixtures thereof. See abstract. Narang teaches batteries comprising an anode, a cathode and a fire-retardant electrolyte composition including a lithium salt dissolved in a solvent, wherein the solvent is a phosphate having the structure as shown in Formula I (see col. 3, lines 63-col. 4, lines 10):



wherein R1, R2 and R3 may be C1-C6 alkyl terminally substituted with 0-3 halogen atoms and containing 0-3 ether linkages. The structure of instant claim 26 is encompassed by Formula I of Narang. Narang specifically discloses the compound recited by instant claim 26 in col. 7, lines

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57-64. This section of Narang teaches that tris-(methoxyethyl) phosphate (formula of instant claim) may be used as the phosphate for the electrolyte solvent. Furthermore, Narang teaches a specific example using tri-(methoxyethyl)phosphate (TMEP) as the solvent and LiPF<sub>6</sub> as the electrolyte salt of the electrolyte of a lithium cell (Table 2). The battery of Narang may be a Li<sub>x</sub>C<sub>6</sub>/electrolyte/LiCoO<sub>2</sub> type battery (lithium ion battery). Narang teaches preferred lithium salts include compounds of the formula Li-A, wherein A is an anion which may be BF<sub>4</sub> or PF<sub>6</sub> (col. 10, lines 17-27).

Thus the claim is anticipated.

***Response to Arguments***

Applicant's arguments filed 9/11/03 have been fully considered but they are not persuasive.

Applicant argues due to the addition of the phrase "consisting essentially of", the claimed invention is no longer anticipated by the Narang reference. Applicant argues that while Narang teaches adding a CO<sub>2</sub>-generating agent is optional, the disclosure points out advantages of the battery containing the agent. Applicant states Narang is "ambiguous" regarding the necessity of the CO<sub>2</sub>-generating agent because it teaches the advantage of adding the compound to one of ordinary skill in the art.

Applicant's assertion that the Narang reference is "ambiguous" regarding the necessity of the CO<sub>2</sub>-generating agent is illogical. Specifically, Narang states the electrolyte composition optionally contains a CO<sub>2</sub>-generating agent. Narang clearly states that "optional" or "optionally" means that the subsequently described circumstance may or may not occur, and that the description includes instances in which said circumstance occurs and instances in which it does

not (col. 7, lines 15-24). Furthermore, Tables 1 and 2 provide multiple examples wherein the electrolyte does not contain a CO<sub>2</sub>-generating agent and multiple examples wherein the electrode does contain a CO<sub>2</sub>-generating agent. Thus, Narang is not ambiguous regarding the addition of a CO<sub>2</sub>-generating agent.

Applicant argues the Narang reference provides the opportunity for the selection of a number of different solvents. However, Narang discloses a specific example using the solvent of the claimed invention. Applicant argues Narang discloses preferred salts, but is silent with respect to the mixture of LiBF<sub>4</sub> with another lithium salt. However, the claim 26 does not require a mixture of LiBF<sub>4</sub> with another lithium salt.

Applicant further argues, Narang uses different solvents in combination with different lithium salts as claimed in the present invention, accordingly, one of ordinary skill in the art would be forced to choose a solvent from the different lithium salt. It is unclear what Applicant is attempting to argue. Specifically, “one of ordinary skill in the art would be forced to choose a solvent from the different lithium salt” is unclear because a solvent is not a lithium salt.

Applicant then states Narang results in “picking and choosing” in order to anticipate the claimed invention. Examiner disagrees with Applicant’s interpretation of the Narang reference. In col. 3, lines 63-col. 4, lines 14 Narang teaches the solvent of the instant invention. Furthermore, col. 7, lines 57-64 and Table 2 gives specific examples of electrolytes using TMEP (formula of instant claim). Thus, one is not selecting from “many solvents”, as asserted by Applicant.

Regarding the teaching of the lithium salt by Narang, Narang is not limited to the examples or preferred teachings. Note that Narang teaches in col. 10, lines 19-27 that “*preferred* lithium salts include compounds of the formula Li-A, wherein A is an anion which

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may be...BF<sub>4</sub>...PF<sub>6</sub>...and mixtures thereof". Both LiBF<sub>4</sub> and LiPF<sub>6</sub> are common lithium salts for lithium secondary batteries. See Linden, Handbook of Batteries, page 36.15. Note the list of twelve salts (col. 10, lines 21-22) disclosed by Narang is not considered to be selecting from "many electrolyte salts" as asserted by Applicant.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).



Tracy Dove  
Patent Examiner  
Technology Center 1700  
Art Unit 1745

October 16, 2003